

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A solid state reaction method for the production of tetrabasic lead sulfate by reacting 4PbO and PbSO₄, comprising the steps of:

mixing a stoichiometric mixture of 4PbO and PbSO₄;

heating the stoichiometric mixture of 4PbO and PbSO₄ at a temperature between 500 and 700°C for 3 to 8 hours; and

deagglomerating and sieving resulting tetrabasic lead sulfate.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Previously Presented) A lead-acid battery paste comprised of the tetrabasic lead sulfate obtained according to the method of claim 1, production of lead-acid battery plates being made with said paste, and production of lead-acid batteries being subsequently made with the plates.

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (New) The solid state reaction method of Claim 1 wherein the step of heating the stoichiometric mixture of 4PbO and PbSO₄ is performed at a temperature of approximately 600°C.

14. (New) The solid state reaction method of Claim 13 wherein the step of heating the stoichiometric mixture of 4PbO and PbSO₄ is performed for approximately 4 hours.

15. (New) The solid state reaction method of Claim 1 wherein the tetrabasic lead sulfate has a particle size of less than 10 µm.

16. (New) The solid state reaction method of Claim 1 wherein the step of deagglomerating and sieving is a dispersion process.

17. (New) The solid state reaction method of Claim 16 wherein the dispersion process is carried out under dry conditions.

18. (New) The solid state reaction method of Claim 16 wherein the dispersion process is carried out in a liquid suspension.

19. (New) A method of forming a battery plate comprising:
mixing a stoichiometric mixture of 4PbO and PbSO₄;
heating the stoichiometric mixture of 4PbO and PbSO₄ at a temperature between approximately 500 and 700°C for between approximately 3 and 8 hours to form tetrabasic lead sulfate;
deagglomerating and sieving the tetrabasic lead sulfate;
forming a paste using the tetrabasic lead sulfate; and
providing the paste on a battery plate.

20. (New) The method of Claim 19 wherein the step of heating the stoichiometric mixture of 4PbO and PbSO₄ is performed at a temperature of approximately 600°C.

21. (New) The method of Claim 20 wherein the step of heating the stoichiometric mixture of 4PbO and PbSO₄ is performed for approximately 4 hours.

22. (New) The method of Claim 19 wherein the tetrabasic lead sulfate has a particle size of less than 10 µm.

23. (New) The method of Claim 19 wherein the step of deagglomerating and sieving is a dispersion process.

24. (New) The method of Claim 23 wherein the dispersion process is carried out under dry conditions.

25. (New) The method of Claim 23 wherein the dispersion process is carried out in a liquid suspension.

26. (New) A lead-acid battery produced by a method comprising:
providing a battery comprising a plurality of battery plates, the battery plates prepared by a method comprising:
mixing a stoichiometric mixture of 4PbO and PbSO₄;
heating the stoichiometric mixture at a temperature between 500 and 700°C for a period of between approximately 3 and 8 hours to form tetrabasic lead sulfate;
deagglomerating and sieving the tetrabasic lead sulfate;
forming a paste using the deagglomerated and sieved tetrabasic lead sulfate; and
providing the paste on a battery plate.

27. (New) The method of Claim 26 wherein the step of heating the stoichiometric mixture is performed at a temperature of approximately 600°C.

28. (New) The method of Claim 26 wherein the step of heating the stoichiometric mixture is performed for approximately 4 hours.

29. (New) The method of Claim 26 wherein the tetrabasic lead sulfate has a particle size of less than 10 μm .

30. (New) The method of Claim 29 wherein the step of heating the stoichiometric mixture is performed at a temperature of approximately 600°C for approximately 4 hours.